

The Nomadic App Revolution

Are you ready for the future of distributed computing?
Welcome to the Nomadic Apps revolution!



What are nomadic apps?

Nomadic apps are 12-factor apps evolved for edge computing, IoT, and AI at the edge. They're scalable, portable, and adaptable to diverse, constrained environments.

Why do you need nomadic apps now?

Edge computing market is exploding: \$232 billion in 2024, reaching \$350 billion by 2027 (IDC's March 2024 forecast). It already drives 1/3 of ~ \$650 billion global software spend. Cloud-native 12-factor isn't enough – edge demands a new approach. Only truly nomadic apps can thrive at the edge.

How are nomadic apps different from 12-factor apps?

ASPECT	12-FACTOR APPS	NOMADIC APPS
Portability	■	■
Scalability	■	■
DevOps friendly	■	■
External configuration	■	■
Deployment	Stateless processes for cloud	Single-binary for anywhere
Dependencies	Declared and isolated	Minimal external dependencies
Statelessness	Promoted, data in backing services	Can be stateful, works offline
Primary environment	Cloud	Wide range (edge to cloud)
Offline capability	Not specifically addressed	Key feature
Internal communication	Not specified	Emphasized, often unified protocol
Target infrastructure	Primarily cloud platforms	Diverse (embedded to cloud)
Data persistence	Typically external databases	Can be self-contained
Updates and maintenance	Rolling updates, blue-green deployments	Potentially self-updating

How can you make your apps truly nomadic?

Moving from cloud to edge is not a simple relocation but a revolutionary change in how apps are built and operated. Cloud and edge environments could not be more different:

- **Cloud:** Abundant resources, reliable connections, centralized security
- **Edge:** Limited resources, intermittent networks, broader attack surface

BUILDING CLOUD-NATIVE APPS	PILLARS	BUILDING EDGE-NATIVE APPS
<ul style="list-style-type: none">• Optimizing for high-performance computing• Implementing microservices architectures	Workload	<ul style="list-style-type: none">• Designing for resource-constrained devices• Ensuring resilience during network outages• Managing updates and versioning across distributed edge nodes
<ul style="list-style-type: none">• Storing data with virtually unlimited cloud resources• Replicating and caching data globally• Ensuring high availability and protecting against data loss utilizing multiple data centers & regions	Data	<ul style="list-style-type: none">• Storing data with limited local resources• Implementing local caching with eventual consistency• Ensuring data integrity in offline scenarios
<ul style="list-style-type: none">• Managing inter-service communication• Load balancing across multiple instances and/or clouds• Managing API versioning and backward compatibility	Connectivity	<ul style="list-style-type: none">• Optimizing for unreliable or intermittent network connections• Managing edge-to-cloud communication• Designing for offline functionality

What tech stack shall I use to build truly nomadic apps?

At Synadia, we've reimaged distributed systems for the edge. Our stack - NATS, JetStream, and Nex - bridges cloud and edge, maintaining agility and scalability.

Here's how Synadia's edge-native tech stack compares to traditional cloud-native approaches:

CLOUD NATIVE APPS TECH STACK	PILLARS	BUILDING EDGE-NATIVE APPS WITH SYNADIA
<ul style="list-style-type: none">• Container orchestrators / runtimes (e.g. Kubernetes, ECS, Fargate, GCP and Azure counterparts)• Serverless runtime (e.g. AWS Lambda, GCP/Azure counterparts)	Workload	NEX
<ul style="list-style-type: none">• Streaming (e.g. Kafka, Pulsar, Red Panda, Kinesis, Azure Event Hub)• Key value stores (e.g. Redis, DynamoDB)• Object stores (e.g. Minio, S3, GCP/Azure counterparts)	Data	JetStream
<ul style="list-style-type: none">• Message queues (e.g. RabbitMQ, SNS, SQS, GCP/Azure counterparts)• IoT connectivity (e.g. EMQX, other MQTT brokers)• Service discovery (e.g. Consul, Kubernetes services, service mesh)• Micro-service connectivity (e.g. RPC, API calls, OPC-UA)• API gateways (e.g. Kong, AWS API gateway)• System-level observability (e.g. Splunk, Datadog)	Connectivity	NATS

Why choose Synadia?

Our “batteries included” approach makes your apps truly nomadic:

- **Work offline**
- **Handle spotty connections**
- **Use resources efficiently**
- **Adapt to changing conditions**

By including essential functionalities within the stack itself, Synadia helps developers create robust, self-sufficient edge applications requiring no external dependencies.

Ready to start?

Start a free trial of Synadia Platform today



FREE TRIAL



NOMADIC APPS

